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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte FRANK S. HADA,
MICHAEL ALAN HERMANS, and RONALD F. GROPP

Appeal 2009-0979
Application 10/662,139
Technology Center 3700

Decided:¹ March 5, 2009

Before TONI R. SCHEINER, LORA M. GREEN, and
FRANCISCO C. PRATS, *Administrative Patent Judges*.

GREEN, *Administrative Patent Judge*.

DECISION ON APPEAL

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

This is a decision on appeal under 35 U.S.C. § 134 from the Examiner's final rejection of claims 1-9, 13-21, 23-25, and 27-33.² We have jurisdiction under 35 U.S.C. § 6(b).

STATEMENT OF THE CASE

The claims are directed to a system for through-air drying paper webs.

Claim 1 is representative of the claims on appeal, and reads as follows:

1. A system for through-air drying paper webs comprising:
 - a first fabric for conveying a paper web;
 - a through-air dryer comprising a hood surrounding a drying cylinder, the through-air dryer being configured to convey a hot gaseous stream through a paper web traveling over the drying cylinder;
 - a throughdrying fabric being wrapped around the drying cylinder of the through-air dryer, the throughdrying fabric forming an endless loop; and
 - a transfer roll positioned outside the endless loop of the throughdrying fabric, the first fabric and the throughdrying fabric being wrapped around the transfer roll in an overlapping relationship, the transfer roll including a pressurized zone configured to emit a gaseous stream for facilitating transfer of a paper web from the first fabric to the throughdrying fabric, adjacent to the transfer roll.

² Claims 1-10 and 13-45 are pending, claims 34-44 stand withdrawn from consideration, claim 45 stands indicated as being allowable, and claims 10, 22, and 26 have been indicated as being allowable if amended to be written in independent form, including all the limitations of the base claim (App. Br. 2).

The Examiner relies on the following evidence:

Kankaanpää	US 3,891,500	Jun. 24, 1975
Huostila	US 4,238,284	Dec. 9, 1980

We affirm.

ISSUE (Obviousness)

The Examiner concludes that claims are rendered obvious by the combination of Huostila and Kankaanpää.

Appellants contend that Huostila teaches away from the combination, and that modifying Huostila as suggested by the Examiner would modify its basic principle of operation.

Thus, the issue on Appeal is: Have Appellants demonstrated that the Examiner erred in combining Huostila with Kankaanpää, in that Huostila teaches away from the combination, and that modifying Huostila as suggested by the Examiner would modify its basic principle of operation?

FINDINGS OF FACT

FF1 The Specification discloses that “the present invention is directed to a system and process for through-air drying paper webs, namely tissue webs.” (Spec. 1.)

FF2 Figure 2 of the disclosure is reproduced below:

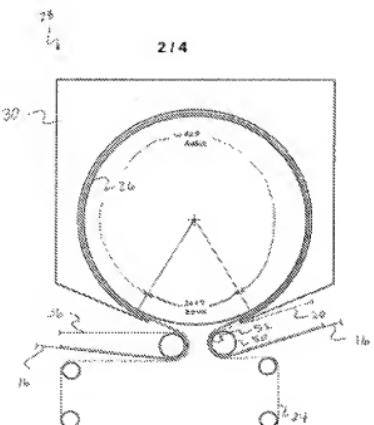


FIG. 2

FF3 Figure 2 shows a side view of an embodiment of a through-air dryer according to the invention (*id.* at 4).

FF4 The web 16 is transferred to a transfer fabric 20, and then transferred to through-drying fabric 24 and carried around a drying cylinder 26 of through-air dryer 28 (*id. at 5*).

FF5 The through-air dryer is shown generally by reference 28 includes a hood 30, and the hood 30 directs hot air through tissue web 16 that is carried on through drying fabric 24 (*id.* at 5-6). The hot air is drawn through the web 16 and through the perforated drying cylinder 26 (*id.* at 6).

FF6 A pressurized roll **50** includes a pressurized zone **52** that pushes web **16** off the transfer fabric **20** onto the throughdrying fabric **24** (*id.*).

FF7 Thus, the first transfer fabric 20 is wrapped around the transfer roll 50 adjacent the exterior surface of the roll, and the through-drying fabric 24

overlaps the transfer fabric **20** and is also wrapped around the transfer roll **50** (*id.* at 9). The tissue web **16** is then positioned between transfer fabric **20** and the throughdryng fabric **24** along the transfer roll **50** (*id.*).

FF8 The Examiner rejects claims 1-9, 13-21, 23-25, and 27-33 under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Huostila and Kankaanpää (Ans. 3). As Appellants do not argue the claims separately, we focus our analysis on claim 1, and claims 2-9, 13-21, 23-25, and 27-33 stand or fall with that claim. 37 C.F.R. § 41.37(c)(1)(vii).

FF9 The Examiner finds that Huostila discloses all of the elements of claim 1 (Ans. 3-5), except for teaching the use of a transfer roll that includes “a pressurized zone configured to emit a gaseous stream for facilitating transfer of a paper web from the first fabric to the through drying fabric, adjacent to the transfer roll” (*id.* at 5).

FF10 In the tissue paper making apparatus of Huostila, the through drying fabric is felt, which absorbs water from the web due to the capillary structure of the felt (Huostila, col. 2, ll. 31-45).

FF11 According to Huostila, the use of felt “is in direct contradistinction to prior pick-up fabrics formed of wire from which water readily travels toward the web.” (*Id.* at col. 2, ll. 45-47.)

FF12 The suction zone of Huostila allows for further dewatering of the web and transfer of the web from the felt to the drying wire (*id.* at col. 4, ll. 15-22).

FF13 The Examiner relies on Kankaanpää for teaching a transfer roll that includes “a pressurized zone configured to emit a gaseous stream for

facilitating transfer of a paper web from the first fabric to the through drying fabric.” (Ans. 5.)

FF14 The Examiner concludes that it would have been obvious to one of ordinary skill in the art at the time of invention to modify Huostila to include a transfer roll that includes a pressurized zone configured to emit a gaseous stream for facilitating transfer of a paper web from the first fabric to a throughdrying fabric adjacent the transfer roll in order to increase the speed so that the apparatus is more efficient and more product is produced (Ans. 6-7).

PRINCIPLES OF LAW

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the art; (3) the differences between the claimed invention and the prior art; and (4) secondary considerations of nonobviousness, if any. *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966). The Supreme Court has recently emphasized that “the [obviousness] analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.” *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, ___, 127 S. Ct. 1727, 1741 (2007). “The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results.” *Id.* at ___, 127 S. Ct. at 1739. Moreover, an “[e]xpress suggestion to substitute

one equivalent for another need not be present to render such substitution obvious.” *In re Fout*, 675 F.2d 297, 301 (CCPA 1982). Thus,

If a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability. For the same reason, if a technique has been used to improve one device, and a person of ordinary skill in the art would recognize that it would improve similar devices in the same way, using the technique is obvious unless its actual application is beyond his or her skill.

KSR, 550 U.S. at ___, 127 S. Ct. at 1740.

ANALYSIS

Appellants argue that Huostila teaches away from the combination as set forth by the Examiner (App. Br. 7). Huostila, Appellants argue, teaches the use of a drawing roller 25 with a suction zone rather than a pressurized zone as claimed by Appellants, and Huostila teaches that dewatering of the web occurs in the suction zones of the drawing roller 25 (*id.* at 8-9).

Appellants assert that Kankaanpää teaches a transfer roll 19 that has an interior overpressure chamber, which partly assists in drying the web, and also forces the web to follow wire 6, which is the direct opposite of the vacuum zone of Huostila, and thus “one of ordinary skill in the art would be led away from substituting the transfer roll equipped with a vacuum zone of Huostila, et al. with a transfer roll that includes a pressurized zone configured to emit a gaseous stream.” (*Id.* at 9-10.)

Appellants argue further that the modification of Huostila proposed by the Examiner changes its principle of operation (*id.* at 10). According to

Appellants, Huostila uses a pick-up felt along with the vacuum roller, and the felt helps remove water from the web by its capillary properties (*id.*).

Thus, Appellants assert:

[R]eplacing the “vacuum roller” of Huostila, et al. with a roller having a pressurized zone configured to emit a gaseous stream would not dewater the web on the drawing roller. In actuality, such a modification would destroy the principle of operation of both the pick-up felt . . . and the suction zone . . . of [the] drawing roller . . . Replacing the vacuum roller with a roller having a pressurized zone configured to emit a gaseous stream would cause water to transfer from the pick-up felt back into the web.

(*Id.* at 10-11.)

We have carefully considered Appellants’ arguments, but conclude that they do not overcome the Examiner’s *prima facie* case of obviousness. While the suction zone of Huostila may work on a principle that is opposite of the device of Kankaanpää, which works by having a pressurized zone, the ordinary artisan would understand that both serve the purpose of further drying the tissue web as well as effecting the transfer of the web from one wire to another (FF12, FF14). Thus, the ordinary artisan would understand that the pressurized zone of Kankaanpää could be used in place of the suction zone of Huostila.

We also do not agree that modifying Huostila as suggested by the Examiner would modify its principle of operation. The ordinary artisan would understand that replacing the suction zone of Huostila with the pressurized zone of Kankaanpää would also require replacement of the felt with a different pick-up that does not supply that capillary action, and

Huostila teaches that pick-up fabrics formed of wire from which water readily travels toward the web were known to the ordinary artisan (FF11).

CONCLUSIONS OF LAW

We conclude that Appellants have not demonstrated that the Examiner erred in combining Huostila with Kankaanpää, as Appellants have not shown that Huostila teaches away from the combination, and that modifying Huostila as suggested by the Examiner would modify its basic principle of operation.

We thus affirm the rejection of claims 1-9, 13-21, 23-25, and 27-33 under 35 U.S.C. § 103(a) as being rendered obvious by the combination of Huostila and Kankaanpää.

TIME LIMITS

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

AFFIRMED

cdc

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